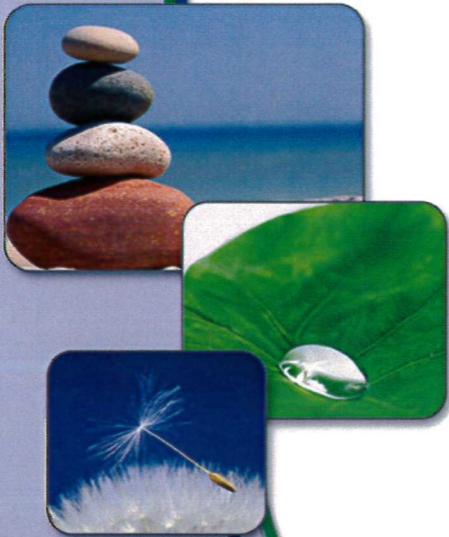


TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT



TestAmerica Laboratories, Inc.

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-28728-1

Client Project/Site: Olin Chemical Wilmington MA Superfund S

For:

Olin Corporation
PO BOX 248
Charleston, Tennessee 37310-0248

Attn: Mr. James Cashwell

Joseph A. Chimi

Authorized for release by:

12/4/2012 12:06:39 PM

Joe Chimi
Report Production Representative
joe.chimi@testamericainc.com

Designee for

Becky Mason
Project Manager II
becky.mason@testamericainc.com

LINKS

Review your project
results through

Total Access

Have a Question?

Ask
The
Expert

Visit us at:
www.testamericainc.com

CHECKED FOR COMPLETENESS
OF PARAMETERS ORDERED BY:

JAC 12/12/12

WastBureal

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	8
Client Sample Results	11
QC Sample Results	15
QC Association Summary	21
Lab Chronicle	25
Certification Summary	28
Method Summary	29
Sample Summary	30
Receipt Checklists	31
Chain of Custody	32

Definitions/Glossary

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
F	MS or MSD exceeds the control limits

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

dry weight basis	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Case Narrative

Client: Olin Corporation
Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Job ID: 480-28728-1

Laboratory: TestAmerica Buffalo

Narrative

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 11/17/2012; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 1.8, 2.0, 2.1, 2.6, 3.0, 3.4, 3.7 and 3.8 C.

DISSOLVED METALS (ICP)

Samples OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW (480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7) and OC-SW-SD-17-DUP (480-28728-8) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010. The samples were prepared on 11/19/2012 and analyzed on 11/21/2012.

Sodium failed the recovery criteria low for the MS of sample OC-SW-SD-17 (480-28728-7) in batch 480-92417. The associated LCS and LCSD recovered within control limits. Refer to the QC report for details.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No other difficulties were encountered during the metals (ICP) analyses.

All other quality control parameters were within the acceptance limits.

TOTAL METALS (ICP)

Samples OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW (480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7) and OC-SW-SD-17-DUP (480-28728-8) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010. The samples were prepared on 11/19/2012 and analyzed on 11/29/2012.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

SPECIFIC CONDUCTIVITY

Samples OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW (480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7) and OC-SW-SD-17-DUP (480-28728-8) were analyzed for specific conductivity in accordance with SM20 2510B. The samples were analyzed on 11/21/2012.

No difficulties were encountered during the conductivity analyses.

All quality control parameters were within the acceptance limits.

ANIONS (28 DAY HOLD TIME)

Samples OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW

Case Narrative

Client: Olin Corporation
Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Job ID: 480-28728-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

(480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7) and OC-SW-SD-17-DUP (480-28728-8) were analyzed for anions (28 day hold time) in accordance with EPA Method 300.0. The samples were analyzed on 11/26/2012, 11/28/2012 and 11/29/2012.

Sulfate failed the recovery criteria high for the MSD of sample OC-SW-ISCO3 (480-28728-3) in batch 480-92709. The associated LCS recovered within control limits. Refer to the QC report for details.

Samples OC-SW-ISCO1 (480-28728-1)[2X], OC-SW-ISCO2 (480-28728-2)[5X], OC-SW-ISCO3 (480-28728-3)[5X], OC-SW-PZ-16RRSW (480-28728-4)[5X], OC-SW-PZ-17RRSW (480-28728-5)[5X], OC-SW-PZ-18RSW (480-28728-6)[2X], OC-SW-SD-17 (480-28728-7)[5X] and OC-SW-SD-17-DUP (480-28728-8)[5X] required dilution prior to analysis due to high target concentration. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the anions analyses.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW (480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7) and OC-SW-SD-17-DUP (480-28728-8) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 11/20/2012.

Samples OC-SW-ISCO1 (480-28728-1)[50X], OC-SW-ISCO2 (480-28728-2)[100X], OC-SW-PZ-16RRSW (480-28728-4)[100X], OC-SW-PZ-17RRSW (480-28728-5)[100X], OC-SW-PZ-18RSW (480-28728-6)[20X], OC-SW-SD-17 (480-28728-7)[100X] and OC-SW-SD-17-DUP (480-28728-8)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRITE

Samples OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW (480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7) and OC-SW-SD-17-DUP (480-28728-8) were analyzed for Nitrogen-Nitrite in accordance with MCAWW 353.2. The samples were analyzed on 11/23/2012.

The following samples were analyzed outside the method defined holding time because the request for the test was made after the holding time for the sample expired: OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW (480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7), OC-SW-SD-17 (480-28728-7 MS), OC-SW-SD-17 (480-28728-7 MSD), OC-SW-SD-17-DUP (480-28728-8).

No difficulties were encountered during the nitrite analyses.

All quality control parameters were within the acceptance limits.

NITRATE

Samples OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW (480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7) and OC-SW-SD-17-DUP (480-28728-8) were analyzed for Nitrate in accordance with EPA Method 353.2. The samples were analyzed on 11/23/2012.

The following samples were analyzed outside the method defined holding time because the request for the test was made after the holding time for the sample expired: OC-SW-ISCO1 (480-28728-1), OC-SW-ISCO2 (480-28728-2), OC-SW-ISCO3 (480-28728-3), OC-SW-PZ-16RRSW (480-28728-4), OC-SW-PZ-17RRSW (480-28728-5), OC-SW-PZ-18RSW (480-28728-6), OC-SW-SD-17 (480-28728-7), OC-SW-SD-17-DUP (480-28728-8).

Case Narrative

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Job ID: 480-28728-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

No difficulties were encountered during the nitrate analyses.

All quality control parameters were within the acceptance limits.

1

2

3

4

5

6

7

8

9

10

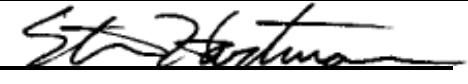
11

12

13

14

MassDEP Analytical Protocol Certification Form

Laboratory Name:	TestAmerica Buffalo		Project #:	480-28728-1	
Project Location:	Olin Chemical Superfund Site			RTN:	
This form provides certifications for the following data set: list Laboratory Sample ID Number(s):					
480-28728-(1-8)					
Matrices:	<input checked="" type="checkbox"/> Groundwater/Surface Water <input type="checkbox"/> Soil/Sediment <input type="checkbox"/> Drinking Water <input type="checkbox"/> Air <input type="checkbox"/> Other:				
CAM Protocols (check all that apply below):					
8260 VOC CAM II A	<input type="checkbox"/> 7470/7471 Hg <input type="checkbox"/> CAM III B	<input type="checkbox"/> Mass DEP VPH <input type="checkbox"/> CAM IV A	<input type="checkbox"/> 8081 Pesticides <input type="checkbox"/> CAM V B	<input type="checkbox"/> 7196 Hex Cr <input type="checkbox"/> CAM VI B	<input type="checkbox"/> Mass DEP APH <input type="checkbox"/> CAM IX A
8270 SVOC CAM II B	<input type="checkbox"/> 7010 Metals <input type="checkbox"/> CAM III C	<input type="checkbox"/> Mass DEP EPH <input type="checkbox"/> CAM IV B	<input type="checkbox"/> 8151 Herbicides <input type="checkbox"/> CAM V C	<input type="checkbox"/> 8330 Explosives <input type="checkbox"/> CAM VIII A	<input type="checkbox"/> TO-15 VOC <input type="checkbox"/> CAM IX B
6010 Metals CAM III A	<input checked="" type="checkbox"/> 6020 Metals <input type="checkbox"/> CAM III D	<input type="checkbox"/> 8082 PCB <input type="checkbox"/> CAM V A	<input type="checkbox"/> 9014 Total Cyanide/PAC <input type="checkbox"/> CAM VI A	<input type="checkbox"/> 6860 Perchlorate <input type="checkbox"/> CAM VIII B	
Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status					
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
E	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Responses to Questions G, H and I below are required for "Presumptive Certainty" status					
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ¹
¹ All negative responses must be addressed in an attached laboratory narrative.					
I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.					
Signature:			Position: Laboratory Director-TestAmerica Westfield		
Printed Name:	Steven C. Hartmann		Date: 12/4/12 12:00		
This form has been electronically signed and approved					

Detection Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Client Sample ID: OC-SW-ISCO1

Lab Sample ID: 480-28728-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.019		0.0050	0.0010	mg/L	1		6010	Total/NA
Aluminum	0.20		0.20	0.060	mg/L	1		6010	Total/NA
Sodium	76		1.0	0.32	mg/L	1		6010	Total/NA
Chromium	0.017		0.0050	0.0010	mg/L	1		6010	Dissolved
Aluminum	0.17	J	0.20	0.060	mg/L	1		6010	Dissolved
Sodium	81		1.0	0.32	mg/L	1		6010	Dissolved
Chloride	110		1.0	0.56	mg/L	2		300.0	Total/NA
Sulfate	110		4.0	0.70	mg/L	2		300.0	Total/NA
Ammonia	23		1.0	0.45	mg/L	50		350.1	Total/NA
Nitrate as N	0.34	H	0.050	0.011	mg/L	1		353.2	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	720		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: OC-SW-ISCO2

Lab Sample ID: 480-28728-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.074		0.0050	0.0010	mg/L	1		6010	Total/NA
Aluminum	0.55		0.20	0.060	mg/L	1		6010	Total/NA
Sodium	120		1.0	0.32	mg/L	1		6010	Total/NA
Chromium	0.031		0.0050	0.0010	mg/L	1		6010	Dissolved
Aluminum	0.14	J	0.20	0.060	mg/L	1		6010	Dissolved
Sodium	120		1.0	0.32	mg/L	1		6010	Dissolved
Chloride	140		2.5	1.4	mg/L	5		300.0	Total/NA
Sulfate	330		10	1.7	mg/L	5		300.0	Total/NA
Ammonia	50		2.0	0.90	mg/L	100		350.1	Total/NA
Nitrate as N	2.0	H	0.050	0.011	mg/L	1		353.2	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1300		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: OC-SW-ISCO3

Lab Sample ID: 480-28728-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.14	J	0.20	0.060	mg/L	1		6010	Total/NA
Sodium	78		1.0	0.32	mg/L	1		6010	Total/NA
Sodium	78		1.0	0.32	mg/L	1		6010	Dissolved
Chloride	150		2.5	1.4	mg/L	5		300.0	Total/NA
Sulfate	29		2.0	0.35	mg/L	1		300.0	Total/NA
Ammonia	1.1		0.020	0.0090	mg/L	1		350.1	Total/NA
Nitrate as N	1.0	H	0.050	0.011	mg/L	1		353.2	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	680		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: OC-SW-PZ-16RRSW

Lab Sample ID: 480-28728-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.53		0.0050	0.0010	mg/L	1		6010	Total/NA
Aluminum	2.3		0.20	0.060	mg/L	1		6010	Total/NA
Sodium	130		1.0	0.32	mg/L	1		6010	Total/NA
Chromium	0.30		0.0050	0.0010	mg/L	1		6010	Dissolved
Aluminum	1.1		0.20	0.060	mg/L	1		6010	Dissolved
Sodium	130		1.0	0.32	mg/L	1		6010	Dissolved

TestAmerica Buffalo

Detection Summary

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Client Sample ID: OC-SW-PZ-16RRSW (Continued)

Lab Sample ID: 480-28728-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	140		2.5	1.4	mg/L	5		300.0	Total/NA
Sulfate	320		10	1.7	mg/L	5		300.0	Total/NA
Ammonia	52		2.0	0.90	mg/L	100		350.1	Total/NA
Nitrate as N	1.3	H	0.050	0.011	mg/L	1		353.2	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1400		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: OC-SW-PZ-17RRSW

Lab Sample ID: 480-28728-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.92		0.0050	0.0010	mg/L	1		6010	Total/NA
Aluminum	3.8		0.20	0.060	mg/L	1		6010	Total/NA
Sodium	140		1.0	0.32	mg/L	1		6010	Total/NA
Chromium	0.36		0.0050	0.0010	mg/L	1		6010	Dissolved
Aluminum	0.93		0.20	0.060	mg/L	1		6010	Dissolved
Sodium	140		1.0	0.32	mg/L	1		6010	Dissolved
Chloride	160		2.5	1.4	mg/L	5		300.0	Total/NA
Sulfate	350		10	1.7	mg/L	5		300.0	Total/NA
Ammonia	58		2.0	0.90	mg/L	100		350.1	Total/NA
Nitrate as N	0.69	H	0.050	0.011	mg/L	1		353.2	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1400		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: OC-SW-PZ-18RSW

Lab Sample ID: 480-28728-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.020		0.0050	0.0010	mg/L	1		6010	Total/NA
Aluminum	0.21		0.20	0.060	mg/L	1		6010	Total/NA
Sodium	78		1.0	0.32	mg/L	1		6010	Total/NA
Chromium	0.015		0.0050	0.0010	mg/L	1		6010	Dissolved
Aluminum	0.12	J	0.20	0.060	mg/L	1		6010	Dissolved
Sodium	79		1.0	0.32	mg/L	1		6010	Dissolved
Chloride	110		1.0	0.56	mg/L	2		300.0	Total/NA
Sulfate	110		4.0	0.70	mg/L	2		300.0	Total/NA
Ammonia	24		0.40	0.18	mg/L	20		350.1	Total/NA
Nitrate as N	0.35	H	0.050	0.011	mg/L	1		353.2	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	730		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: OC-SW-SD-17

Lab Sample ID: 480-28728-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.84		0.0050	0.0010	mg/L	1		6010	Total/NA
Aluminum	3.4		0.20	0.060	mg/L	1		6010	Total/NA
Sodium	130		1.0	0.32	mg/L	1		6010	Total/NA
Chromium	0.36		0.0050	0.0010	mg/L	1		6010	Dissolved
Aluminum	0.95		0.20	0.060	mg/L	1		6010	Dissolved
Sodium	140		1.0	0.32	mg/L	1		6010	Dissolved
Chloride	170		2.5	1.4	mg/L	5		300.0	Total/NA
Sulfate	350		10	1.7	mg/L	5		300.0	Total/NA
Ammonia	61		2.0	0.90	mg/L	100		350.1	Total/NA

TestAmerica Buffalo

Detection Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Client Sample ID: OC-SW-SD-17 (Continued)

Lab Sample ID: 480-28728-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.60	H	0.050	0.011	mg/L	1		353.2	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1500		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

Client Sample ID: OC-SW-SD-17-DUP

Lab Sample ID: 480-28728-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.86		0.0050	0.0010	mg/L	1		6010	Total/NA
Aluminum	3.4		0.20	0.060	mg/L	1		6010	Total/NA
Sodium	140		1.0	0.32	mg/L	1		6010	Total/NA
Chromium	0.36		0.0050	0.0010	mg/L	1		6010	Dissolved
Aluminum	0.98		0.20	0.060	mg/L	1		6010	Dissolved
Sodium	140		1.0	0.32	mg/L	1		6010	Dissolved
Chloride	170		2.5	1.4	mg/L	5		300.0	Total/NA
Sulfate	350		10	1.7	mg/L	5		300.0	Total/NA
Ammonia	60		2.0	0.90	mg/L	100		350.1	Total/NA
Nitrate as N	0.61	H	0.050	0.011	mg/L	1		353.2	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1500		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Client Sample ID: OC-SW-ISCO1

Lab Sample ID: 480-28728-1

Matrix: Water

Date Collected: 11/16/12 10:05

Date Received: 11/17/12 09:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.019		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:09	1
Aluminum	0.20		0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:09	1
Sodium	76		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:09	1

Method: 6010 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.017		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:29	1
Aluminum	0.17	J	0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:29	1
Sodium	81		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		1.0	0.56	mg/L			11/28/12 23:31	2
Sulfate	110		4.0	0.70	mg/L			11/28/12 23:31	2
Ammonia	23		1.0	0.45	mg/L			11/20/12 16:32	50
Nitrate as N	0.34	H	0.050	0.011	mg/L			11/23/12 20:30	1
Nitrite as N	ND	H	0.050	0.020	mg/L			11/23/12 20:30	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	720		1.0	1.0	umhos/cm			11/21/12 16:00	1

Client Sample ID: OC-SW-ISCO2

Lab Sample ID: 480-28728-2

Matrix: Water

Date Collected: 11/16/12 08:45

Date Received: 11/17/12 09:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.074		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:15	1
Aluminum	0.55		0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:15	1
Sodium	120		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:15	1

Method: 6010 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.031		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:31	1
Aluminum	0.14	J	0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:31	1
Sodium	120		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140		2.5	1.4	mg/L			11/28/12 23:42	5
Sulfate	330		10	1.7	mg/L			11/28/12 23:42	5
Ammonia	50		2.0	0.90	mg/L			11/20/12 16:33	100
Nitrate as N	2.0	H	0.050	0.011	mg/L			11/23/12 20:31	1
Nitrite as N	ND	H	0.050	0.020	mg/L			11/23/12 20:31	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	1300		1.0	1.0	umhos/cm			11/21/12 16:00	1

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Client Sample ID: OC-SW-ISCO3

Lab Sample ID: 480-28728-3

Date Collected: 11/16/12 08:35

Matrix: Water

Date Received: 11/17/12 09:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:18	1
Aluminum	0.14	J	0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:18	1
Sodium	78		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:18	1

Method: 6010 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:34	1
Aluminum	ND		0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:34	1
Sodium	78		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	150		2.5	1.4	mg/L			11/28/12 23:52	5
Sulfate	29		2.0	0.35	mg/L			11/26/12 20:21	1
Ammonia	1.1		0.020	0.0090	mg/L			11/20/12 13:45	1
Nitrate as N	1.0	H	0.050	0.011	mg/L			11/23/12 20:32	1
Nitrite as N	ND	H	0.050	0.020	mg/L			11/23/12 20:32	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	680		1.0	1.0	umhos/cm			11/21/12 16:00	1

Client Sample ID: OC-SW-PZ-16RRSW

Lab Sample ID: 480-28728-4

Date Collected: 11/16/12 09:00

Matrix: Water

Date Received: 11/17/12 09:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.53		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:20	1
Aluminum	2.3		0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:20	1
Sodium	130		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:20	1

Method: 6010 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.30		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:36	1
Aluminum	1.1		0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:36	1
Sodium	130		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140		2.5	1.4	mg/L			11/29/12 00:02	5
Sulfate	320		10	1.7	mg/L			11/29/12 00:02	5
Ammonia	52		2.0	0.90	mg/L			11/20/12 16:34	100
Nitrate as N	1.3	H	0.050	0.011	mg/L			11/23/12 20:34	1
Nitrite as N	ND	H	0.050	0.020	mg/L			11/23/12 20:34	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	1400		1.0	1.0	umhos/cm			11/21/12 16:00	1

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Client Sample ID: OC-SW-PZ-17RRSW

Lab Sample ID: 480-28728-5

Matrix: Water

Date Collected: 11/16/12 09:20

Date Received: 11/17/12 09:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.92		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:22	1
Aluminum	3.8		0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:22	1
Sodium	140		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:22	1

Method: 6010 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.36		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:38	1
Aluminum	0.93		0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:38	1
Sodium	140		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	160		2.5	1.4	mg/L			11/29/12 00:12	5
Sulfate	350		10	1.7	mg/L			11/29/12 00:12	5
Ammonia	58		2.0	0.90	mg/L			11/20/12 16:35	100
Nitrate as N	0.69	H	0.050	0.011	mg/L			11/23/12 20:35	1
Nitrite as N	ND	H	0.050	0.020	mg/L			11/23/12 20:35	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	1400		1.0	1.0	umhos/cm			11/21/12 16:00	1

Client Sample ID: OC-SW-PZ-18RSW

Lab Sample ID: 480-28728-6

Matrix: Water

Date Collected: 11/16/12 09:55

Date Received: 11/17/12 09:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.020		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:25	1
Aluminum	0.21		0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:25	1
Sodium	78		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:25	1

Method: 6010 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.015		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:40	1
Aluminum	0.12	J	0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:40	1
Sodium	79		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		1.0	0.56	mg/L			11/29/12 00:22	2
Sulfate	110		4.0	0.70	mg/L			11/29/12 00:22	2
Ammonia	24		0.40	0.18	mg/L			11/20/12 15:26	20
Nitrate as N	0.35	H	0.050	0.011	mg/L			11/23/12 20:36	1
Nitrite as N	ND	H	0.050	0.020	mg/L			11/23/12 20:36	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	730		1.0	1.0	umhos/cm			11/21/12 16:00	1

TestAmerica Buffalo

Client Sample Results

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Client Sample ID: OC-SW-SD-17

Lab Sample ID: 480-28728-7

Matrix: Water

Date Collected: 11/16/12 09:30

Date Received: 11/17/12 09:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.84		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:27	1
Aluminum	3.4		0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:27	1
Sodium	130		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:27	1

Method: 6010 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.36		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:42	1
Aluminum	0.95		0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:42	1
Sodium	140		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	170		2.5	1.4	mg/L			11/29/12 00:32	5
Sulfate	350		10	1.7	mg/L			11/29/12 00:32	5
Ammonia	61		2.0	0.90	mg/L			11/20/12 16:36	100
Nitrate as N	0.60	H	0.050	0.011	mg/L			11/23/12 20:40	1
Nitrite as N	ND	H	0.050	0.020	mg/L			11/23/12 20:40	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	1500		1.0	1.0	umhos/cm			11/21/12 16:00	1

Client Sample ID: OC-SW-SD-17-DUP

Lab Sample ID: 480-28728-8

Matrix: Water

Date Collected: 11/16/12 09:30

Date Received: 11/17/12 09:00

Method: 6010 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.86		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:34	1
Aluminum	3.4		0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:34	1
Sodium	140		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:34	1

Method: 6010 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.36		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:58	1
Aluminum	0.98		0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:58	1
Sodium	140		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	170		2.5	1.4	mg/L			11/29/12 01:43	5
Sulfate	350		10	1.7	mg/L			11/29/12 01:43	5
Ammonia	60		2.0	0.90	mg/L			11/20/12 16:39	100
Nitrate as N	0.61	H	0.050	0.011	mg/L			11/23/12 20:37	1
Nitrite as N	ND	H	0.050	0.020	mg/L			11/23/12 20:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	1500		1.0	1.0	umhos/cm			11/21/12 16:00	1

TestAmerica Buffalo

QC Sample Results

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Method: 6010 - Metals (ICP)

Lab Sample ID: MB 480-91659/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 93423

Prep Batch: 91659

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chromium	ND		0.0050	0.0010	mg/L		11/19/12 08:30	11/29/12 14:02	1
Aluminum	ND		0.20	0.060	mg/L		11/19/12 08:30	11/29/12 14:02	1
Sodium	ND		1.0	0.32	mg/L		11/19/12 08:30	11/29/12 14:02	1

Lab Sample ID: LCS 480-91659/2-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 93423

Prep Batch: 91659

Analyte	MB	MB	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Chromium			0.200	0.229		mg/L		115	80 - 120
Aluminum			10.0	10.2		mg/L		101	80 - 120
Sodium			10.0	10.7		mg/L		107	80 - 120

Lab Sample ID: LCSD 480-91659/3-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 93423

Prep Batch: 91659

Analyte	MB	MB	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Chromium			0.200	0.223		mg/L		111	80 - 120
Aluminum			10.0	9.90		mg/L		99	80 - 120
Sodium			10.0	10.4		mg/L		104	80 - 120

Lab Sample ID: 480-28728-7 MS

Client Sample ID: OC-SW-SD-17

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 93423

Prep Batch: 91659

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Chromium	0.84		0.200	1.06	4	mg/L		107	75 - 125
Aluminum	3.4		10.0	13.5		mg/L		101	75 - 125
Sodium	130		10.0	145	4	mg/L		104	75 - 125

Lab Sample ID: 480-28728-7 MSD

Client Sample ID: OC-SW-SD-17

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 93423

Prep Batch: 91659

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Chromium	0.84		0.200	1.05	4	mg/L		105	75 - 125
Aluminum	3.4		10.0	13.4		mg/L		100	75 - 125
Sodium	130		10.0	145	4	mg/L		103	75 - 125

Lab Sample ID: MB 480-91347/27-B

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Dissolved

Analysis Batch: 92417

Prep Batch: 91659

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chromium	ND		0.0050	0.0010	mg/L		11/19/12 08:30	11/21/12 18:18	1
Aluminum	ND		0.20	0.060	mg/L		11/19/12 08:30	11/21/12 18:18	1
Sodium	ND		1.0	0.32	mg/L		11/19/12 08:30	11/21/12 18:18	1

TestAmerica Buffalo

QC Sample Results

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Method: 6010 - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-91347/28-B

Matrix: Water

Analysis Batch: 92417

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 91657

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec.	Limits
		Result	Qualifier			%Rec.	
Chromium	0.200	0.214		mg/L		107	80 - 120
Aluminum	10.0	10.6		mg/L		105	80 - 120
Sodium	10.0	10.2		mg/L		101	80 - 120

Lab Sample ID: LCSD 480-91347/24-B

Matrix: Water

Analysis Batch: 92417

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Prep Batch: 91657

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec.	RPD	Limit
		Result	Qualifier			%Rec.		
Chromium	0.200	0.210		mg/L		105	80 - 120	2
Aluminum	10.0	10.4		mg/L		104	80 - 120	2
Sodium	10.0	10.0		mg/L		100	80 - 120	1

Lab Sample ID: 480-28728-7 MS

Matrix: Water

Analysis Batch: 92417

Client Sample ID: OC-SW-SD-17

Prep Type: Dissolved

Prep Batch: 91657

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier			%Rec.	
Chromium	0.36		0.200	0.568		mg/L		104	75 - 125
Aluminum	0.95		10.0	11.4		mg/L		104	75 - 125
Sodium	140		10.0	146	4	mg/L		74	75 - 125

Lab Sample ID: 480-28728-7 MSD

Matrix: Water

Analysis Batch: 92417

Client Sample ID: OC-SW-SD-17

Prep Type: Dissolved

Prep Batch: 91657

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier			%Rec.			
Chromium	0.36		0.200	0.564		mg/L		102	75 - 125	1	20
Aluminum	0.95		10.0	11.4		mg/L		104	75 - 125	0	20
Sodium	140		10.0	148	4	mg/L		92	75 - 125	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-92709/28

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 92709

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.28	mg/L			11/26/12 17:18	1
Sulfate	ND		2.0	0.35	mg/L			11/26/12 17:18	1

Lab Sample ID: LCS 480-92709/27

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 92709

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec.	Limits
		Result	Qualifier			%Rec.	
Chloride	20.0	21.0		mg/L		105	90 - 110
Sulfate	20.0	21.5		mg/L		108	90 - 110

TestAmerica Buffalo

QC Sample Results

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 480-28728-3 MS

Matrix: Water

Analysis Batch: 92709

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Sulfate	29		25.0	54.4		mg/L		103	90 - 110

Lab Sample ID: 480-28728-3 MSD

Matrix: Water

Analysis Batch: 92709

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec.	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Sulfate	29		25.0	57.2	F	mg/L		114	90 - 110

Lab Sample ID: MB 480-93121/52

Matrix: Water

Analysis Batch: 93121

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.28	mg/L			11/28/12 21:30	1
Sulfate	ND		2.0	0.35	mg/L			11/28/12 21:30	1

Lab Sample ID: LCS 480-93121/51

Matrix: Water

Analysis Batch: 93121

Analyte	Spike	LCS	LCS	Unit	D	%Rec.	Limits
	Added	Result	Qualifier				
Chloride	20.0	18.9		mg/L		95	90 - 110
Sulfate	20.0	19.4		mg/L		97	90 - 110

Lab Sample ID: 480-28728-7 MS

Matrix: Water

Analysis Batch: 93121

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier				
Chloride	170		125	285		mg/L		96	90 - 110
Sulfate	350		125	465		mg/L		92	90 - 110

Lab Sample ID: 480-28728-7 MSD

Matrix: Water

Analysis Batch: 93121

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier				
Chloride	170		125	296		mg/L		105	90 - 110
Sulfate	350		125	479		mg/L		102	90 - 110

Lab Sample ID: MB 480-93124/76

Matrix: Water

Analysis Batch: 93124

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50	0.28	mg/L			11/29/12 01:33	1
Sulfate	ND		2.0	0.35	mg/L			11/29/12 01:33	1

TestAmerica Buffalo

QC Sample Results

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-93124/75

Matrix: Water

Analysis Batch: 93124

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				
Chloride	20.0	19.0		mg/L	95	95	90 - 110
Sulfate	20.0	19.4		mg/L	97	97	90 - 110

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-92063/171

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 92063

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ammonia	ND		0.020	0.0090	mg/L			11/20/12 14:41	1

Lab Sample ID: MB 480-92063/195

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 92063

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ammonia	ND		0.020	0.0090	mg/L			11/20/12 15:05	1

Lab Sample ID: MB 480-92063/51

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 92063

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ammonia	ND		0.020	0.0090	mg/L			11/20/12 12:44	1

Lab Sample ID: MB 480-92063/99

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 92063

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ammonia	ND		0.020	0.0090	mg/L			11/20/12 13:30	1

Lab Sample ID: LCS 480-92063/100

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 92063

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				
Ammonia	1.00	0.985		mg/L	99	99	90 - 110

Lab Sample ID: LCS 480-92063/172

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 92063

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				
Ammonia	1.00	0.988		mg/L	99	99	90 - 110

TestAmerica Buffalo

QC Sample Results

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 480-92063/196

Matrix: Water

Analysis Batch: 92063

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Ammonia	1.00	0.986		mg/L		99	90 - 110

Lab Sample ID: LCS 480-92063/52

Matrix: Water

Analysis Batch: 92063

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Ammonia	1.00	0.978		mg/L		98	90 - 110

Lab Sample ID: MB 480-92072/3

Matrix: Water

Analysis Batch: 92072

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ammonia	ND		0.020	0.0090	mg/L			11/20/12 16:21	1

Lab Sample ID: LCS 480-92072/4

Matrix: Water

Analysis Batch: 92072

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Ammonia	1.00	0.989		mg/L		99	90 - 110

Lab Sample ID: 480-28728-7 MS

Matrix: Water

Analysis Batch: 92072

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Ammonia	61		20.0	80.3		mg/L		97	54 - 150

Lab Sample ID: 480-28728-7 MSD

Matrix: Water

Analysis Batch: 92072

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Ammonia	61		20.0	79.9		mg/L		95	54 - 150	1

Method: 353.2 - Nitrogen, Nitrite

Lab Sample ID: MB 480-92510/3

Matrix: Water

Analysis Batch: 92510

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrite as N	ND		0.050	0.020	mg/L			11/23/12 20:27	1

TestAmerica Buffalo

QC Sample Results

Client: Olin Corporation

TestAmerica Job ID: 480-28728-1

Project/Site: Olin Chemical Wilmington MA Superfund S

Method: 353.2 - Nitrogen, Nitrite (Continued)

Lab Sample ID: LCS 480-92510/4

Matrix: Water

Analysis Batch: 92510

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec.	Limits
		Result	Qualifier			%Rec.	
Nitrite as N	1.50	1.55		mg/L		103	90 - 110

Lab Sample ID: LCSD 480-92510/5

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analysis Batch: 92510

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec.	RPD	Limit
		Result	Qualifier			%Rec.		
Nitrite as N	1.50	1.56		mg/L		104	90 - 110	1 20

Lab Sample ID: 480-28728-7 MS

Client Sample ID: OC-SW-SD-17

Prep Type: Total/NA

Analysis Batch: 92510

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.
	Result	Qualifier	Added	Result	Qualifier			%Rec.
Nitrite as N	ND	H	1.00	1.01	H	mg/L		101

Lab Sample ID: 480-28728-7 MSD

Client Sample ID: OC-SW-SD-17

Prep Type: Total/NA

Analysis Batch: 92510

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec.	RPD
	Result	Qualifier	Added	Result	Qualifier			%Rec.	
Nitrite as N	ND	H	1.00	1.03	H	mg/L		103	90 - 110

TestAmerica Buffalo

QC Association Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Metals

Prep Batch: 91657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Dissolved	Water	3005A	5
480-28728-2	OC-SW-ISCO2	Dissolved	Water	3005A	6
480-28728-3	OC-SW-ISCO3	Dissolved	Water	3005A	7
480-28728-4	OC-SW-PZ-16RRSW	Dissolved	Water	3005A	8
480-28728-5	OC-SW-PZ-17RRSW	Dissolved	Water	3005A	9
480-28728-6	OC-SW-PZ-18RSW	Dissolved	Water	3005A	10
480-28728-7	OC-SW-SD-17	Dissolved	Water	3005A	11
480-28728-7 MS	OC-SW-SD-17	Dissolved	Water	3005A	12
480-28728-7 MSD	OC-SW-SD-17	Dissolved	Water	3005A	13
480-28728-8	OC-SW-SD-17-DUP	Dissolved	Water	3005A	14
LCS 480-91347/28-B	Lab Control Sample	Dissolved	Water	3005A	
LCSD 480-91347/24-B	Lab Control Sample Dup	Dissolved	Water	3005A	
MB 480-91347/27-B	Method Blank	Dissolved	Water	3005A	

Prep Batch: 91659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Total/NA	Water	3005A	12
480-28728-2	OC-SW-ISCO2	Total/NA	Water	3005A	13
480-28728-3	OC-SW-ISCO3	Total/NA	Water	3005A	
480-28728-4	OC-SW-PZ-16RRSW	Total/NA	Water	3005A	
480-28728-5	OC-SW-PZ-17RRSW	Total/NA	Water	3005A	
480-28728-6	OC-SW-PZ-18RSW	Total/NA	Water	3005A	
480-28728-7	OC-SW-SD-17	Total/NA	Water	3005A	
480-28728-7 MS	OC-SW-SD-17	Total/NA	Water	3005A	
480-28728-7 MSD	OC-SW-SD-17	Total/NA	Water	3005A	
480-28728-8	OC-SW-SD-17-DUP	Total/NA	Water	3005A	
LCS 480-91659/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 480-91659/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
MB 480-91659/1-A	Method Blank	Total/NA	Water	3005A	

Analysis Batch: 92417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Dissolved	Water	6010	91657
480-28728-2	OC-SW-ISCO2	Dissolved	Water	6010	91657
480-28728-3	OC-SW-ISCO3	Dissolved	Water	6010	91657
480-28728-4	OC-SW-PZ-16RRSW	Dissolved	Water	6010	91657
480-28728-5	OC-SW-PZ-17RRSW	Dissolved	Water	6010	91657
480-28728-6	OC-SW-PZ-18RSW	Dissolved	Water	6010	91657
480-28728-7	OC-SW-SD-17	Dissolved	Water	6010	91657
480-28728-7 MS	OC-SW-SD-17	Dissolved	Water	6010	91657
480-28728-7 MSD	OC-SW-SD-17	Dissolved	Water	6010	91657
480-28728-8	OC-SW-SD-17-DUP	Dissolved	Water	6010	91657
LCS 480-91347/28-B	Lab Control Sample	Dissolved	Water	6010	91657
LCSD 480-91347/24-B	Lab Control Sample Dup	Dissolved	Water	6010	91657
MB 480-91347/27-B	Method Blank	Dissolved	Water	6010	91657

Analysis Batch: 93423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Total/NA	Water	6010	91659
480-28728-2	OC-SW-ISCO2	Total/NA	Water	6010	91659
480-28728-3	OC-SW-ISCO3	Total/NA	Water	6010	91659

TestAmerica Buffalo

QC Association Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Metals (Continued)

Analysis Batch: 93423 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-4	OC-SW-PZ-16RRSW	Total/NA	Water	6010	91659
480-28728-5	OC-SW-PZ-17RRSW	Total/NA	Water	6010	91659
480-28728-6	OC-SW-PZ-18RSW	Total/NA	Water	6010	91659
480-28728-7	OC-SW-SD-17	Total/NA	Water	6010	91659
480-28728-7 MS	OC-SW-SD-17	Total/NA	Water	6010	91659
480-28728-7 MSD	OC-SW-SD-17	Total/NA	Water	6010	91659
480-28728-8	OC-SW-SD-17-DUP	Total/NA	Water	6010	91659
LCS 480-91659/2-A	Lab Control Sample	Total/NA	Water	6010	91659
LCSD 480-91659/3-A	Lab Control Sample Dup	Total/NA	Water	6010	91659
MB 480-91659/1-A	Method Blank	Total/NA	Water	6010	91659

General Chemistry

Analysis Batch: 92063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-3	OC-SW-ISCO3	Total/NA	Water	350.1	12
480-28728-6	OC-SW-PZ-18RSW	Total/NA	Water	350.1	13
LCS 480-92063/100	Lab Control Sample	Total/NA	Water	350.1	14
LCS 480-92063/172	Lab Control Sample	Total/NA	Water	350.1	
LCS 480-92063/196	Lab Control Sample	Total/NA	Water	350.1	
LCS 480-92063/52	Lab Control Sample	Total/NA	Water	350.1	
MB 480-92063/171	Method Blank	Total/NA	Water	350.1	
MB 480-92063/195	Method Blank	Total/NA	Water	350.1	
MB 480-92063/51	Method Blank	Total/NA	Water	350.1	
MB 480-92063/99	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 92072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Total/NA	Water	350.1	
480-28728-2	OC-SW-ISCO2	Total/NA	Water	350.1	
480-28728-4	OC-SW-PZ-16RRSW	Total/NA	Water	350.1	
480-28728-5	OC-SW-PZ-17RRSW	Total/NA	Water	350.1	
480-28728-7	OC-SW-SD-17	Total/NA	Water	350.1	
480-28728-7 MS	OC-SW-SD-17	Total/NA	Water	350.1	
480-28728-7 MSD	OC-SW-SD-17	Total/NA	Water	350.1	
480-28728-8	OC-SW-SD-17-DUP	Total/NA	Water	350.1	
LCS 480-92072/4	Lab Control Sample	Total/NA	Water	350.1	
MB 480-92072/3	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 92317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Total/NA	Water	SM 2510B	
480-28728-2	OC-SW-ISCO2	Total/NA	Water	SM 2510B	
480-28728-3	OC-SW-ISCO3	Total/NA	Water	SM 2510B	
480-28728-4	OC-SW-PZ-16RRSW	Total/NA	Water	SM 2510B	
480-28728-5	OC-SW-PZ-17RRSW	Total/NA	Water	SM 2510B	
480-28728-6	OC-SW-PZ-18RSW	Total/NA	Water	SM 2510B	
480-28728-7	OC-SW-SD-17	Total/NA	Water	SM 2510B	
480-28728-8	OC-SW-SD-17-DUP	Total/NA	Water	SM 2510B	
LCS 480-92317/1	Lab Control Sample	Total/NA	Water	SM 2510B	

TestAmerica Buffalo

QC Association Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

General Chemistry (Continued)

Analysis Batch: 92510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Total/NA	Water	353.2	5
480-28728-2	OC-SW-ISCO2	Total/NA	Water	353.2	6
480-28728-3	OC-SW-ISCO3	Total/NA	Water	353.2	7
480-28728-4	OC-SW-PZ-16RRSW	Total/NA	Water	353.2	8
480-28728-5	OC-SW-PZ-17RRSW	Total/NA	Water	353.2	9
480-28728-6	OC-SW-PZ-18RSW	Total/NA	Water	353.2	10
480-28728-7	OC-SW-SD-17	Total/NA	Water	353.2	11
480-28728-7 MS	OC-SW-SD-17	Total/NA	Water	353.2	12
480-28728-7 MSD	OC-SW-SD-17	Total/NA	Water	353.2	13
480-28728-8	OC-SW-SD-17-DUP	Total/NA	Water	353.2	14
LCS 480-92510/4	Lab Control Sample	Total/NA	Water	353.2	
LCSD 480-92510/5	Lab Control Sample Dup	Total/NA	Water	353.2	
MB 480-92510/3	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 92511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Total/NA	Water	353.2	12
480-28728-2	OC-SW-ISCO2	Total/NA	Water	353.2	13
480-28728-3	OC-SW-ISCO3	Total/NA	Water	353.2	14
480-28728-4	OC-SW-PZ-16RRSW	Total/NA	Water	353.2	
480-28728-5	OC-SW-PZ-17RRSW	Total/NA	Water	353.2	
480-28728-6	OC-SW-PZ-18RSW	Total/NA	Water	353.2	
480-28728-7	OC-SW-SD-17	Total/NA	Water	353.2	
480-28728-8	OC-SW-SD-17-DUP	Total/NA	Water	353.2	

Analysis Batch: 92709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-3	OC-SW-ISCO3	Total/NA	Water	300.0	
480-28728-3 MS	OC-SW-ISCO3	Total/NA	Water	300.0	
480-28728-3 MSD	OC-SW-ISCO3	Total/NA	Water	300.0	
LCS 480-92709/27	Lab Control Sample	Total/NA	Water	300.0	
MB 480-92709/28	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 93121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-1	OC-SW-ISCO1	Total/NA	Water	300.0	
480-28728-2	OC-SW-ISCO2	Total/NA	Water	300.0	
480-28728-3	OC-SW-ISCO3	Total/NA	Water	300.0	
480-28728-4	OC-SW-PZ-16RRSW	Total/NA	Water	300.0	
480-28728-5	OC-SW-PZ-17RRSW	Total/NA	Water	300.0	
480-28728-6	OC-SW-PZ-18RSW	Total/NA	Water	300.0	
480-28728-7	OC-SW-SD-17	Total/NA	Water	300.0	
480-28728-7 MS	OC-SW-SD-17	Total/NA	Water	300.0	
480-28728-7 MSD	OC-SW-SD-17	Total/NA	Water	300.0	
LCS 480-93121/51	Lab Control Sample	Total/NA	Water	300.0	
MB 480-93121/52	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 93124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-28728-8	OC-SW-SD-17-DUP	Total/NA	Water	300.0	
LCS 480-93124/75	Lab Control Sample	Total/NA	Water	300.0	

TestAmerica Buffalo

QC Association Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

General Chemistry (Continued)

Analysis Batch: 93124 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-93124/76	Method Blank	Total/NA	Water	300.0	

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Lab Chronicle

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Client Sample ID: OC-SW-ISCO1

Lab Sample ID: 480-28728-1

Date Collected: 11/16/12 10:05

Matrix: Water

Date Received: 11/17/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	91657	11/19/12 08:30	SS	TAL BUF
Dissolved	Analysis	6010		1			92417	11/21/12 18:29	AH	TAL BUF
Total/NA	Prep	3005A			50 mL	50 mL	91659	11/19/12 08:30	SS	TAL BUF
Total/NA	Analysis	6010		1			93423	11/29/12 14:09	AH	TAL BUF
Total/NA	Analysis	350.1		50	5 mL	5 mL	92072	11/20/12 16:32	KS	TAL BUF
Total/NA	Analysis	SM 2510B		1			92317	11/21/12 16:00	LK	TAL BUF
Total/NA	Analysis	353.2		1	5 mL	5 mL	92510	11/23/12 20:30	KS	TAL BUF
Total/NA	Analysis	353.2		1	1.0 mL	1.0 mL	92511	11/23/12 20:30	KS	TAL BUF
Total/NA	Analysis	300.0		2	1 mL	1.0 mL	93121	11/28/12 23:31	KC	TAL BUF

Client Sample ID: OC-SW-ISCO2

Lab Sample ID: 480-28728-2

Date Collected: 11/16/12 08:45

Matrix: Water

Date Received: 11/17/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	91657	11/19/12 08:30	SS	TAL BUF
Dissolved	Analysis	6010		1			92417	11/21/12 18:31	AH	TAL BUF
Total/NA	Prep	3005A			50 mL	50 mL	91659	11/19/12 08:30	SS	TAL BUF
Total/NA	Analysis	6010		1			93423	11/29/12 14:15	AH	TAL BUF
Total/NA	Analysis	350.1		100	5 mL	5 mL	92072	11/20/12 16:33	KS	TAL BUF
Total/NA	Analysis	SM 2510B		1			92317	11/21/12 16:00	LK	TAL BUF
Total/NA	Analysis	353.2		1	5 mL	5 mL	92510	11/23/12 20:31	KS	TAL BUF
Total/NA	Analysis	353.2		1	1.0 mL	1.0 mL	92511	11/23/12 20:31	KS	TAL BUF
Total/NA	Analysis	300.0		5	1 mL	1.0 mL	93121	11/28/12 23:42	KC	TAL BUF

Client Sample ID: OC-SW-ISCO3

Lab Sample ID: 480-28728-3

Date Collected: 11/16/12 08:35

Matrix: Water

Date Received: 11/17/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	91657	11/19/12 08:30	SS	TAL BUF
Dissolved	Analysis	6010		1			92417	11/21/12 18:34	AH	TAL BUF
Total/NA	Prep	3005A			50 mL	50 mL	91659	11/19/12 08:30	SS	TAL BUF
Total/NA	Analysis	6010		1			93423	11/29/12 14:18	AH	TAL BUF
Total/NA	Analysis	350.1		1	5 mL	5 mL	92063	11/20/12 13:45	KS	TAL BUF
Total/NA	Analysis	SM 2510B		1			92317	11/21/12 16:00	LK	TAL BUF
Total/NA	Analysis	353.2		1	5 mL	5 mL	92510	11/23/12 20:32	KS	TAL BUF
Total/NA	Analysis	353.2		1	1.0 mL	1.0 mL	92511	11/23/12 20:32	KS	TAL BUF
Total/NA	Analysis	300.0		1	1 mL	1.0 mL	92709	11/26/12 20:21	KC	TAL BUF
Total/NA	Analysis	300.0		5	1 mL	1.0 mL	93121	11/28/12 23:52	KC	TAL BUF

TestAmerica Buffalo

Lab Chronicle

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Client Sample ID: OC-SW-PZ-16RRSW

Lab Sample ID: 480-28728-4

Matrix: Water

Date Collected: 11/16/12 09:00

Date Received: 11/17/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	91657	11/19/12 08:30	SS	TAL BUF
Dissolved	Analysis	6010		1			92417	11/21/12 18:36	AH	TAL BUF
Total/NA	Prep	3005A			50 mL	50 mL	91659	11/19/12 08:30	SS	TAL BUF
Total/NA	Analysis	6010		1			93423	11/29/12 14:20	AH	TAL BUF
Total/NA	Analysis	350.1		100	5 mL	5 mL	92072	11/20/12 16:34	KS	TAL BUF
Total/NA	Analysis	SM 2510B		1			92317	11/21/12 16:00	LK	TAL BUF
Total/NA	Analysis	353.2		1	5 mL	5 mL	92510	11/23/12 20:34	KS	TAL BUF
Total/NA	Analysis	353.2		1	1.0 mL	1.0 mL	92511	11/23/12 20:34	KS	TAL BUF
Total/NA	Analysis	300.0		5	1 mL	1.0 mL	93121	11/29/12 00:02	KC	TAL BUF

Client Sample ID: OC-SW-PZ-17RRSW

Lab Sample ID: 480-28728-5

Matrix: Water

Date Collected: 11/16/12 09:20

Date Received: 11/17/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	91657	11/19/12 08:30	SS	TAL BUF
Dissolved	Analysis	6010		1			92417	11/21/12 18:38	AH	TAL BUF
Total/NA	Prep	3005A			50 mL	50 mL	91659	11/19/12 08:30	SS	TAL BUF
Total/NA	Analysis	6010		1			93423	11/29/12 14:22	AH	TAL BUF
Total/NA	Analysis	350.1		100	5 mL	5 mL	92072	11/20/12 16:35	KS	TAL BUF
Total/NA	Analysis	SM 2510B		1			92317	11/21/12 16:00	LK	TAL BUF
Total/NA	Analysis	353.2		1	5 mL	5 mL	92510	11/23/12 20:35	KS	TAL BUF
Total/NA	Analysis	353.2		1	1.0 mL	1.0 mL	92511	11/23/12 20:35	KS	TAL BUF
Total/NA	Analysis	300.0		5	1 mL	1.0 mL	93121	11/29/12 00:12	KC	TAL BUF

Client Sample ID: OC-SW-PZ-18RSW

Lab Sample ID: 480-28728-6

Matrix: Water

Date Collected: 11/16/12 09:55

Date Received: 11/17/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	91657	11/19/12 08:30	SS	TAL BUF
Dissolved	Analysis	6010		1			92417	11/21/12 18:40	AH	TAL BUF
Total/NA	Prep	3005A			50 mL	50 mL	91659	11/19/12 08:30	SS	TAL BUF
Total/NA	Analysis	6010		1			93423	11/29/12 14:25	AH	TAL BUF
Total/NA	Analysis	350.1		20	5 mL	5 mL	92063	11/20/12 15:26	KS	TAL BUF
Total/NA	Analysis	SM 2510B		1			92317	11/21/12 16:00	LK	TAL BUF
Total/NA	Analysis	353.2		1	5 mL	5 mL	92510	11/23/12 20:36	KS	TAL BUF
Total/NA	Analysis	353.2		1	1.0 mL	1.0 mL	92511	11/23/12 20:36	KS	TAL BUF
Total/NA	Analysis	300.0		2	1 mL	1.0 mL	93121	11/29/12 00:22	KC	TAL BUF

TestAmerica Buffalo

Lab Chronicle

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Client Sample ID: OC-SW-SD-17

Date Collected: 11/16/12 09:30

Date Received: 11/17/12 09:00

Lab Sample ID: 480-28728-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	91657	11/19/12 08:30	SS	TAL BUF
Dissolved	Analysis	6010		1			92417	11/21/12 18:42	AH	TAL BUF
Total/NA	Prep	3005A			50 mL	50 mL	91659	11/19/12 08:30	SS	TAL BUF
Total/NA	Analysis	6010		1			93423	11/29/12 14:27	AH	TAL BUF
Total/NA	Analysis	350.1		100	5 mL	5 mL	92072	11/20/12 16:36	KS	TAL BUF
Total/NA	Analysis	SM 2510B		1			92317	11/21/12 16:00	LK	TAL BUF
Total/NA	Analysis	353.2		1	5 mL	5 mL	92510	11/23/12 20:40	KS	TAL BUF
Total/NA	Analysis	353.2		1	1.0 mL	1.0 mL	92511	11/23/12 20:40	KS	TAL BUF
Total/NA	Analysis	300.0		5	1 mL	1.0 mL	93121	11/29/12 00:32	KC	TAL BUF

Client Sample ID: OC-SW-SD-17-DUP

Date Collected: 11/16/12 09:30

Date Received: 11/17/12 09:00

Lab Sample ID: 480-28728-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	91657	11/19/12 08:30	SS	TAL BUF
Dissolved	Analysis	6010		1			92417	11/21/12 18:58	AH	TAL BUF
Total/NA	Prep	3005A			50 mL	50 mL	91659	11/19/12 08:30	SS	TAL BUF
Total/NA	Analysis	6010		1			93423	11/29/12 14:34	AH	TAL BUF
Total/NA	Analysis	350.1		100	5 mL	5 mL	92072	11/20/12 16:39	KS	TAL BUF
Total/NA	Analysis	SM 2510B		1			92317	11/21/12 16:00	LK	TAL BUF
Total/NA	Analysis	353.2		1	5 mL	5 mL	92510	11/23/12 20:37	KS	TAL BUF
Total/NA	Analysis	353.2		1	1.0 mL	1.0 mL	92511	11/23/12 20:37	KS	TAL BUF
Total/NA	Analysis	300.0		5	1 mL	1.0 mL	93124	11/29/12 01:43	KC	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TestAmerica Buffalo

Certification Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-13
California	NELAC	9	1169CA	09-30-13
Connecticut	State Program	1	PH-0568	09-30-14
Florida	NELAC	4	E87672	06-30-13
Georgia	State Program	4	N/A	03-31-13
Georgia	State Program	4	956	06-30-13
Georgia	State Program	4	956	06-30-13
Illinois	NELAC	5	200003	09-30-13
Iowa	State Program	7	374	03-01-13
Kansas	NELAC	7	E-10187	01-31-13
Kentucky	State Program	4	90029	12-31-12
Kentucky (UST)	State Program	4	30	04-01-13
Louisiana	NELAC	6	02031	06-30-13
Maine	State Program	1	NY00044	12-04-12
Maryland	State Program	3	294	03-31-13
Massachusetts	State Program	1	M-NY044	06-30-13
Michigan	State Program	5	9937	04-01-13
Minnesota	NELAC	5	036-999-337	12-31-12
New Hampshire	NELAC	1	2973	09-11-13
New Hampshire	NELAC	1	2337	11-17-13
New Jersey	NELAC	2	NY455	06-30-13
New York	NELAC	2	10026	03-31-13
North Dakota	State Program	8	R-176	03-31-13
Oklahoma	State Program	6	9421	08-31-13
Oregon	NELAC	10	NY200003	06-09-13
Pennsylvania	NELAC	3	68-00281	07-31-13
Rhode Island	State Program	1	LAO00328	12-31-13
Tennessee	State Program	4	TN02970	04-01-13
Texas	NELAC	6	T104704412-11-2	07-31-13
USDA	Federal		P330-11-00386	11-22-14
Virginia	NELAC	3	460185	09-14-13
Washington	State Program	10	C784	02-10-13
West Virginia DEP	State Program	3	252	09-30-13
Wisconsin	State Program	5	998310390	08-31-13

Method Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Method	Method Description	Protocol	Laboratory
6010	Metals (ICP)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
350.1	Nitrogen, Ammonia	MCAWW	TAL BUF
353.2	Nitrogen, Nitrite	MCAWW	TAL BUF
353.2	Nitrate	EPA	TAL BUF
SM 2510B	Conductivity, Specific Conductance	SM	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Sample Summary

Client: Olin Corporation

Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28728-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-28728-1	OC-SW-ISCO1	Water	11/16/12 10:05	11/17/12 09:00
480-28728-2	OC-SW-ISCO2	Water	11/16/12 08:45	11/17/12 09:00
480-28728-3	OC-SW-ISCO3	Water	11/16/12 08:35	11/17/12 09:00
480-28728-4	OC-SW-PZ-16RRSW	Water	11/16/12 09:00	11/17/12 09:00
480-28728-5	OC-SW-PZ-17RRSW	Water	11/16/12 09:20	11/17/12 09:00
480-28728-6	OC-SW-PZ-18RSW	Water	11/16/12 09:55	11/17/12 09:00
480-28728-7	OC-SW-SD-17	Water	11/16/12 09:30	11/17/12 09:00
480-28728-8	OC-SW-SD-17-DUP	Water	11/16/12 09:30	11/17/12 09:00

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Login Sample Receipt Checklist

Client: Olin Corporation

Job Number: 480-28728-1

Login Number: 28728

List Source: TestAmerica Buffalo

List Number: 1

Creator: Robitaille, Zach L

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	OLIN
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	OK
Chlorine Residual checked.	N/A	

Chain of Custody Record

Client Information		Sampler: <i>Chris Mason</i>	Lab PH: <i>Mason, Becky C</i>	Carrier Tracking No#:	COC No: <i>5860-16734-3201.1</i>	Page: <i>Page 1 of 1</i>				
Client Contact: Mr. Brian Guichard	Phone: <i>339-922-3296</i>	E-Mail: <i>bguichard@testamericainc.com</i>	Job#:							
Olin Corporation Address: 51 Eames street City: Wilmington State, Zip: MA, 01887 Phone:	Date Requested: <i>Standard</i>	TAT Requested (days): <i>1 1</i>								
Email: <i>bguichard@olin.com</i> Project Name: Olin Chemical Superfund Site Site:	PO#:	REF#0013								
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp., G=Grab)	Matrix (Inorganic, Organic, Combustible, Corrosive, Flammable, Radioactive)	Preparation Code	S	D	N	Special Instructions/Note:	
OC-SW-SC01	1/16/12	1005	G	Water	X	X	X	X		
OC-SW-SC02		0841		Water	X	X	X	X		
OC-SW-SC03		0935		Water	X	X	X	X		
OC-SW-PZ-1BRRSW		0900		Water	X	X	X	X		
OC-SW-PZ-1TRRSW		0920		Water	X	X	X	X		
OC-SW-PZ-1BRSW		0955		Water	X	X	X	X		
OC-SW-SD-17		0930		Water	X	X	X	X		
OC-SW-SD-17-QUP		0930		Water	X	X	X	X		
MSD 0C-SW-SD-17-HS		0930		Water	X	X	X	X		
MSD 0C-SW-SD-17-MSD		0930		Water	X	X	X	X		
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)										<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months
Empty Kit Reinquished By:										Method of Shipment:
Reinquished by: <i>J.C.</i>	Date/Time: <i>1/16/12</i>	Receiving by: <i>Chris</i>	Company: <i>TestAmerica</i>	Date/Time: <i>1/16/12</i>	Company: <i>TestAmerica</i>					
Reinquished by: <i>J.C.</i>	Date/Time: <i>1/16/12</i>	Received by: <i>J.C.</i>	Company: <i>TestAmerica</i>	Date/Time: <i>1/17/12</i>	Company: <i>TestAmerica</i>					
Reinquished by:	Date/Time:	Received by:	Company:	Date/Time:	Company:					
Custody Seal intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										Cooler Temperature(s) °C and Other Remarks: <i>80 Log in</i>

1
2
3
4
5
6
7
8
9
10
11
12
13
14